



## History of the Field Act & Public School Policies

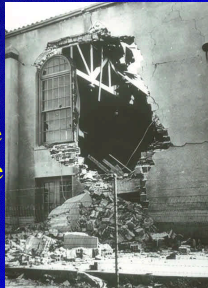


## Compton Junior HS in 1933



## 1933 Long Beach Earthquake Luther Burbank High School

- Mw 6.3, 115 Fatalities
- \$60 million (~\$2 B today)
- 70 Schools Destroyed
- 120 Schools Major Damage
- 300 Schools Minor Damage
- Construction "Shortcuts"
- "Scandalous" failures



## State Street School



## Compton Union HS in 1933



## Stanford Ave. School in LA





## Rationale for the Field Act

- Schools performed poorly in the Long Beach Earthquake – Losses could have been avoided
- Schools are funded with public money
- State Constitution requires children to attend
- Quality in design and construction cited as sources of damage in Coroner's Report
- No Statewide requirement for building permits or inspections at that time (1933 Riley Act)



## Limitations of Field Act

- Did not define a "safe" building
- Implied School Board members were liable
- Prompted some closures, hasty actions
- Prompted some retrofits of obsolete buildings
- Special Senate Committee established to investigate complaints, action in 1939



## Field Act of 1933

- Requires State Architect to regulate Public School construction (now Grades K-14)
- Rigorous Reviews of Building Plans
- Designs by Architects or Structural Engineers
- Designers must periodically observe construction
- Detailed Inspections by qualified professionals
- State's regulations updated every 1 to 3 years



## Garrison Act of 1939

- Required seismic evaluations of the 5235 pre-Field Act School Buildings statewide
- School Boards liable if proven negligent
- Requires Boards to secure funds for retrofits
- If measures fail, School Boards not personally liable
- Act strengthened in 1967, 1968, and 1974



## Policy Advice from 1933 Earthquake Observations

- Joint Technical Committee on Earthquake Protection, Chaired by Dr. Robert Millikan
- "School buildings must be so redesigned and strengthened that a repetition of the recent disaster cannot take place."
- Same requirements should apply to strengthening existing buildings as they apply to new schools under the Field Act.



## 1964 Attorney General's Opinion

- If pre-Field Act Schools were evaluated for seismic safety
- If Schools were found unsafe
- If buildings continued to be used without correction
- School Board members were personally liable for casualties or property loss





## 1966 Attorney General's Opinion

- School Boards have the legal duty to request seismic evaluations of pre-Field Act Schools
- Failure to evaluate could result in personal liability of Board members if accidents are proximately caused by structural defects
- Statewide replacement cost of \$1.1 Billion examined by Committee on School Efficiency and Economy then chaired by Assemblyman Alquist
- \$1900 per Student in Pre-Field Act Classrooms

## 1971 San Fernando Earthquake



A High School Chemistry Lab after the 1971 San Fernando Earthquake – Unrestrained Chemicals can fall, their containers can break, and hazardous reactions can occur.



## Green Act of 1967

- Required School Districts to examine and determine pre-Field Act School safety by 1970
- Defined a slightly less safety standard than the Field Act



## 1974 Amendment to Garrison Act

- Authorized a two year extension to June 30, 1977 for the statewide retrofit deadline
- As long as the retrofit contract had been let and retrofit work had started by that date.
- Retrofits were required to comply with the full Field Act standards, not the lesser examination standard set in 1967



## 1968 Amendment to Garrison Act

- Any Pre-Field Act School found to be unsafe and not subsequently repaired after 1975 shall not be used for school purposes
- At that time, 2031 unsafe pre-Field Act School buildings still in use.



## Los Angeles Unified School District – as an example

- 65% of the retrofits took place in the first six years from 1933 to 1939
- Remaining retrofits or replacements took 35 years
- Final retrofitting was accelerated as a result of extensive damage to Pre-Field Act buildings from the 1971 San Fernando Earthquake



## Retrofit vs. Replacement Decisions

- In the early 1970's, 75% of project decisions were for replacement and 25% for retrofit of Pre-Field Act buildings
- Retrofits exceeding 50% replacement cost were a less likely option than replacement
- Alterations exceeding 75% replacement cost were not eligible for state funds
- Other Factors: education adequacy, historic and cultural significance, lighting, electrical, heating, ventilating, air conditioning, land use



## Recent Legislation 1990 Leased buildings

- Buildings with permits after January 1, 1990
- Structural Engineer's certification of safety
- Reviewed by Division of the State Architect
- Allowed for use as public schools



## Field Act-Compliant Public Schools

- By June 30, 1977, the vast majority of public schools for Grades K-14 were in compliance
- Still a few "exempt" buildings in use today
- New Field Act buildings cost 2% to 4% more than comparable non-Field Act buildings
- Superior safety performance in earthquakes than locally-regulated, age-comparable buildings
- Enhanced repairability after earthquakes



## Recent Legislation Factory-Built Schools

- 40% of all new school construction uses pre-manufactured school buildings (including portables)
- Now some multi-story buildings, cafeterias, auditoriums are factory-built
- Fully Field Act compliant



## Changes to Field Act Regulations

- Updated every one to three years
- Incremental, sometimes dramatic improvements in seismic safety over years
- Early Field Act-complaint buildings are not required to be retrofitted except if found unsafe or they undergo major alterations



## Recent Legislation Nonstructural Pamphlet

- New state law requires Office of Emergency Services, CSSC, DSA, and CDE
- To develop a pamphlet on nonstructural hazard identification and loss reduction
- For personnel in Grades K-14 facilities
- Pamphlet in development, available for Commission review and comment





## Inventory of Older Schools AB 300 Enacted in 2000

---

- Required the Division of the State Architect
- To identify those early Field Act Schools built to now-outdated regulations
- That may pose significant collapse risks
- And that school districts should evaluate for seismic safety
- Report drafted, awaiting Governor's release



## New State Law in 2002 Assembly Bill 16

---

- \$25 Billion Bond Measures Added to Ballots
- Directs Commission to establish an Advisory Committee
- To determine if DSA can develop regulations
- To retrofit non-Field Act buildings to comply with the Field Act